



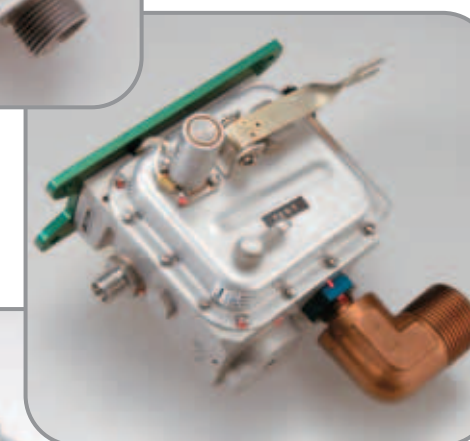
Oxygen and life support

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Continuous Flow Control Regulators

—Pneumatic and Electro-Pneumatic



These pneumatic and electro-pneumatic regulators form a part of the passenger emergency oxygen system when installed on a pressurized-cabin aircraft. When the cabin pressure drops below a predetermined setting, the system automatically initiates and controls the flow of oxygen to the passenger mask compartment. At any altitude, the system may be activated manually at the pneumatic regulator and/or electrically through the electro-pneumatic regulator.

The electro-pneumatic regulator is available with a built-in pressure transducer for monitoring the oxygen-supply pressure with an output in the 0 to 5 VDC range. It also has an installed pressure switch indicating the regulator "on" mode.

WARNING

IMPROPER USE OR IMPROPER MAINTENANCE OF THIS EQUIPMENT MAY RESULT IN INJURY OR DEATH.

THIS EQUIPMENT IS INTENDED TO BE USED ONLY FOR AVIATION APPLICATIONS AND IS TO BE USED ONLY BY, OR UNDER THE SUPERVISION OF, A PILOT OR CREW MEMBER TRAINED AND QUALIFIED IN ITS USE.

THIS EQUIPMENT IS TO BE SERVICED ONLY IN ACCORDANCE WITH THE APPLICABLE COMPONENT MAINTENANCE MANUAL AVAILABLE FROM

AVOX SYSTEMS AND ONLY BY SERVICE TECHNICIANS TRAINED IN THE INHERENT HAZARDS OF HIGH-PRESSURE AVIATION OXYGEN AND KNOWLEDGEABLE IN THIS EQUIPMENT. THE NAMES OF AUTHORIZED SERVICE CENTERS ARE AVAILABLE FROM AVOX SYSTEMS OR YOUR AUTHORIZED AVOX SYSTEMS DISTRIBUTOR.

THIS EQUIPMENT IS TO BE USED ONLY WITH AVIATOR'S BREATHING OXYGEN MEETING THE REQUIREMENTS OF MIL-PRF-27210, TYPE 1.



AVOX Systems

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AVOX Systems



Outstanding Features

- Accurately reduces pressure and controls flow of high pressure (1,850 to 300 psi) oxygen.
- Choice of automatic, electrical, and manual operation.
- Compact, altitude-compensated system.
- First-stage and outlet pressure relief valves. All configurations of the FCU are equipped with a relief valve that will vent to atmosphere should the first-stage or outlet pressure exceed the maximum allowable working pressure.
- Available with or without the surge feature. The surge feature allows a high initial volume flow of oxygen to fill the oxygen distribution lines that serve the passenger mask compartments. After the initial surge of oxygen has filled the distribution lines, operation of the unit returns to normal.

Operation

When an oxygen cylinder pressure range from 1,850 to 300 psi (12.76 to 2.07 MPa) is applied to the inlet of the unit, a first-stage pressure reducer regulates it to a relatively constant value of approximately 100 psi (0.69 MPa). This controlled first-stage pressure is routed to the actuation valve and to the pilot-operated main flow control valve.

Automatic Actuation

At a typical altitude range of 13,250 to 15,000 feet, the actuation valve inside the FCU opens and automatically activates the regulator.

Manual Actuation

The system may be activated manually at any altitude by raising the manual actuation/reset lever on the pneumatic control regulator. Raising the manual actuation/reset lever overrides the automatic mechanism.
Note: For continuous operation at altitudes below the automatic actuation range, the lever must be held in the actuated condition.

Electric Actuation

The system may be actuated electrically at any altitude by momentarily energizing the solenoid switch in the cockpit of the aircraft. Actuation of the solenoid within the electro-pneumatic control regulator depresses a detent, causing opening of the actuation valve, overriding the automatic mechanism.

Manual Reset

(Cabin pressure must typically be below 12,000 feet [3,658 m] altitude.) After actuation (automatic or electrical), the system is reset by depressing the manual actuation/reset lever on the pneumatic control regulator or the manual reset lever on the electro-pneumatic control regulator. The automatic actuation, manual actuation, and electrical actuation capabilities are retained after resetting.

Electric Reset

(Cabin pressure must typically be below 12,000 feet [3,658 m].) After actuation, the system is reset by momentarily energizing the solenoid switch in the cockpit of the aircraft. Energizing the solenoid releases the actuation detent and allows the system to shut down. The actuation and surge capabilities of the unit are retained after resetting.

22504 / 22505 Series



Characteristics				
AVOX P/N	Boeing P/N	Actuation Altitude Ft.	Pressure Transducer	Comments
22504-07	BAC 10-60511-3	13,250 - 14,500	Yes	Electro-pneumatic
22504-09	BAC 10-60511-4	13,250 - 14,500	No	Electro-pneumatic
22504-11	BAC 10-60511-5	14,000 - 15,000	Yes	Electro-pneumatic
22505-07	BAC 10-60510-3	13,250 - 14,500	No	Pneumatic/Manual
22505-09	BAC 10-60510-4	14,000 - 15,000	No	Pneumatic/Manual

Altitude / Flow Data		
Altitude (ft.)	Regulated Pressure (PSIG)	Max Flow (LPM NTPD)
Ground	2.25 - 5.25	230
14,000	2.27 - 5.37	230
20,000	10.85 - 13.85	430
30,000	34.34 - 37.54	770
40,000	49.98 - 53.98	1,000

803661 / 803662 / 803663 Series



Characteristics				
AVOX P/N	Boeing P/N	Actuation Altitude Ft.	Pressure Transducer	Comments
803661-01	BAC 60B50010-19	13,250 - 14,500	No	Basic unit/pneumatic
803661-03	BAC 60B50010-25	13,250 - 14,500	No	Manual reset button
803661-04	BAC 60B50010-22	14,000 - 15,000	No	High altitude airports
803662-01	BAC 60B50010-20	13,250 - 14,500	Yes	Basic unit/electropneumo
803662-02	BAC 60B50010-27	13,250 - 14,500	Yes	Freighter+5/16 outlet lo-flow
803662-04	BAC 60B50010-23	14,000 - 15,000	Yes	High altitude airports
803662-05	BAC 60B50010-28	15,300 - 16,500	Yes	China-Tibet
803662-13	BAC 60B50010-26	13,250 - 14,500	Yes	Manual reset w/ press. xducer
803663-01	BAC 60B50010-21	13,250 - 14,500	No	Basic unit/no surge
803663-04	BAC 60B50010-24	14,000 -15,000	No	High altitude airports /no surge

Altitude / Flow Data*		
Altitude (ft.)	Regulated Pressure (PSIG)	Max Flow (LPM NTPD)
Ground	1.2 - 2.2	360
15,000	1.2 - 3.2	360
20,000	5.8 - 15.2	680
28,000	20.3 - 30.4	1095
34,000	31.2 - 39.1	1335
40,000	41.3 - 45.3	1500

* Table applies to all configurations except 803662-02.

804265 Series



Characteristics	
Actuation altitude	Electrical actuation only
Operational altitude	43,100 feet (13,137 m) – Maximum
Inlet pressures	100 - 2,000 psig (0.69 - 13.8 MPa)
Outlet pressures	See chart
Flow rates (NTPD)	See chart
Pressure relief valve Cracking pressure Reseat pressure	140 ± 10 psig (0.97 ± 0.07 MPa) 100 psig (0.69 MPa) – Minimum
Weight (approximate)	9.7 lbs. (4.4 kg) – Maximum

Altitude / Flow Data		
Altitude (ft.)	Regulated Pressure (PSIG)	Max Flow (LPM NTPD)
Ground	1.20 - 2.70	360
15,000	1.20 - 4.20	360
20,000	6.75 - 9.75	680
28,000	21.69 - 24.69	1095
34,000	30.51 - 33.51	1335
40,000	37.30 - 40.30	1500